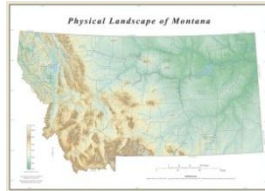


The Role of a Geographic Information System in the State of Montana

GIS is more than a map display on a web page...it is a powerful visualization tool that enables effective communication between an organization and its customers, and between a government and its citizens. The GIS Community of Interest has identified four areas where GIS leverages spatial data to add business value to government entities and the citizens of Montana. These areas should be a strategic focus both today and into the near future.

The Value in TRUE GIS

GIS adds Business Value: GIS is a powerful tool that can assist in reaching organizational goals. It leverages data in non-traditional ways to facilitate informed decisions, design efficient workflows, and ultimately promote better services to constituents. Such information requires strong data integrity and validation (e.g. [GIS Cadastral App](#); [DEQ MSTI Alternatives](#); [FWP Hunt Planner](#)).



Powerful Geoprocessing: GIS relates seemingly unrelated data together to construct information of value to a stakeholder. It is ideal for advanced spatial analysis, geocoding of non-spatial datasets, and even Big Data analytics (e.g. [Idaho Roadway Shading Analysis](#)).

Online Links: [State Gov. uses of GIS](#); [Geodata.gov](#)

The Value in Mobile Computing

Services available based on location: General



information is presented to a user that is relevant to their location (e.g. emergency service facilities, [highway rest service locations](#), nearest DPHHS offices, historical attractions, [hiking trailheads](#)).

Services rendered upon demand:

Information needed by a user that is relevant to their location and required *at that particular point in time* (e.g. what regulations pertain to this stream? Where do I report a road hazard? What zoning regulations pertain to this location?).

Efficiencies for Employees: Data needed for a particular site can be accessed; data collected can be uploaded in near-real time (e.g. on-site inspections; location violations; site regulations; site conditions such as [flood](#), fire, or ice jams).



The Value in User Generated Data

Social data collection/crowdsourcing: Volunteer information can assist an organization in achieving their goals:

A. Project Prioritizations - Identify where resources are most needed (e.g. pothole locations, [icy road conditions](#), [poor network connectivity](#), trail obstructions).



B. Low Cost Data Acquisition - Social data collection projects can assist in achieving management objectives efficiently (e.g. trout population statistics, [invasive species distributions](#), abandoned mines, culvert washouts).

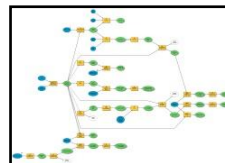


C. Utilize State Resources Efficiently - Target resource activities to capitalize upon publicly contributed information (e.g. noxious weed

locations – use personnel for target verification and eradication instead of search and discovery).

The Value in Collaboration

Business Process Workflow Development: Similar needs & similar workflows can be shared across organizations (e.g. spatially relevant licensing and registration:



pesticide application, [burn permits](#), electrical permits, [building permits](#), water use permits, mining permits, etc.).

Application/processing codes:

Similar needs can use similar codes (e.g. government transparency initiatives such as stimulus spending, construction project expenses, proposed project locations and impacts).

Effective Visualization: Effective visualization of information enables powerful communication both within an organization and with citizens (e.g. [DNRC Grant distribution map](#)).

Data Creation and Sharing: Collaborative cost sharing and use of data (e.g. [MSDI portal](#); Local government imagery and LiDAR acquisitions; [iRAPTOR](#); [MT NHP](#)).

Challenges:

1. Integrating the advantages of GIS into current business practices may require incorporating new business processes.
2. Some of the analytical and computational requirements can be intensive and may require resource reallocation.
3. Cross-agency collaboration will need to be identified at a business level as well as embraced at an executive level to realize the full advantages of cross-agency data sharing & analysis.
4. Managed risks and managed liabilities; how far does an organization go to provide information?
5. Data validation and incorporation of quality control measures before integration.